AMENDMENTS TO THE CLAIMS

The listing of claims will replace all prior versions, and listings of claims in the application.

LISTING OF CLAIMS:

1.   (Currently amended) An integrated and digital production and finishing system for producing and finishing work pieces of a job, comprising:

a) a production device for producing the work pieces of the job;

b) a finishing device for finishing the output of the production device, such finishing device being controlled separately from the production device and having at least one constraint;

c) a production monitor controller that receives input of at least one constraint from the finishing device and an output[[s]] comprising job coordination and optimization information;[[,]] database representation of the structure of job segments; PDL file for job tracking sheet; PDL for a fetch sheet; integrity descriptors; virtual job tickets for said production and finishing devices; and a prompt to call one or more human operators, based at least in part upon constraints of the finishing device, wherein said production monitor controller presents a user with optimization recommendations; and

d) a finishing module coordinator that, after receiving job coordination information the output from the production monitor controller, identifies each device necessary for completion of the job; determines if each needed device is available; and controls, directs and tracks the operation of the finishing device, wherein said finishing device is programmed to automatically process an assembly and finishing operation based upon instructions created prior to producing said work pieces.

2.   (Original) The production and finishing system of claim 1, wherein the production device comprises a printing device and wherein the job is a print job.

3.   (Original) The production and finishing system of claim 1, wherein the finishing device performs packaging operations.

4.   (Original) The production and finishing system of claim 1 wherein the production monitor controller outputs job coordination information comprising identity of job segments determined at least in part upon constraints of the finishing device.

5.   (Original) The production and finishing system of claim 4, wherein the production monitor controller outputs at least a portion of finishing job segment information prior to production of at least a portion of the job by the production device.

6.   (Previously presented) The production and finishing system of claim 4, wherein the production monitor controller output comprises a job segment identifier uniquely associated with each identified job segment.

7.   (Original) The production and finishing system of claim 1, further comprising a virtual finishing job ticket database through which the finishing module coordinator receives at least some job coordination information from the production monitor controller.

8.   (Original) The production and finishing system of claim 7, wherein the production monitor controller outputs job coordination information comprising:

a) identity of at least one job segment determined at least in part upon constraints of the finishing device and

b) a job segment identifier uniquely associated with job coordination information pertaining to the job segment and wherein the virtual finishing job ticket database stores a copy of the job segment identifier.

9.   (Original) The production and finishing system of claim 8, further comprising a job segment identifier code that is physically associated with a job segment wherein such job segment identifier code forms a vector to job coordination information stored in the virtual finishing job ticket database, and pertaining to the job segment to which the job segment identifier code is physically associated.

10.   (Original) The production and finishing system of claim 9, wherein the job segment identifier code comprises recognizable text on a sheet located on the job segment.

11.   (Original) The production and finishing system of claim 9, further comprising a job segment identifier sheet that contains the job segment identifier code.

12.   (Original) The production and finishing system of claim 11, wherein the job segment identifier sheet contains job coordination information pertaining to the job segment that was outputted from the production manager controller and stored in the virtual finishing job ticket database.

13.   (Original) The production and finishing system of claim 11, further comprising a virtual finishing job ticket reader for reading information from the job segment identifier sheet.

14.   (Original) The production and finishing system of claim 7, wherein the production monitor controller outputs a virtual finishing job ticket, a copy of which is stored in the virtual finishing job ticket database.

15.   (Original) The production and finishing system of claim 1, wherein the production manager controller outputs job coordination information comprising:
    a) identification of different job segments for differing operations of the job,
    b) instructions of production of each production job segment; and
    c) instructions for finishing each finishing job segment.

16.   (Original) The production and finishing system of claim 14, wherein the production manager controller outputs further comprise:
    a) integrity descriptors for use by the finishing module coordinator;
    b) at least one virtual print job ticket; and
    c) at least one virtual finishing job ticket.

17. (Original) The production and finishing system of claim 1, further comprising a plurality of finishing devices and a plurality of production devices wherein a plurality of finishing devices are controlled separately from each of the production devices.

18. (Original) The production and finishing system of claim 1, wherein the finishing module coordinator directs operation of at least one finishing device by providing human readable instructions to human operators.

19. (Original) The production and finishing system of claim 1, wherein at least some of the functions of the finishing module coordinator are performed within the same apparatus as the production manager controller device.

20. (Currently amended) A digital system for integrating and controlling assembler/finishing processes, comprising:

a) a production monitor controller capable of separating a production job into job segments based upon the capabilities and constraints of devices to be used in the production process;

b) at least one database for storing information concerning the capabilities and constraints of devices to be used in the production process and for storing job segment descriptions;

c) a finishing module coordinator, in communication with assembler/finisher devices and with at least one database, for control, tracking, and integrity functions of job segments during the production process, wherein said assembler/finisher devices are programmed to automatically process an assembly and finishing operation based upon instructions created prior to producing a job segment.

21.   (Currently amended) An integrated and digital method for coordinating the printing and finishing of a print job, comprising:

a) printing job segments using a printing device having at least one constraint;

b) finishing the printed job segments using a printing device that is controlled separately from the printing device and having at least one constraint;

c) outputting job coordination information from a production monitor controller, such job coordination information being based at least in part upon the constraints of the finishing device, wherein said production monitor controller presents a user with optimization recommendations; and

d) directing, controlling and tracking the operation of the finishing device by a finishing module coordinator after such finishing module coordinator receives job coordination information from the production monitor controller, identifies each device necessary for completion of the job and determines if each needed device is available, wherein said finishing device is programmed to automatically process an assembly and finishing operation based upon instructions created prior to producing said work pieces.

22.   (Original) The method of claim 21 for coordination the printing of the printing and finishing of a print job, further comprising the step of determining, with the production monitor controller, job segments based in part upon the constraints of the finishing device.

23.   (Original) The method of claim 22 for coordination the printing and finishing of a print job, wherein the step of determining job segments occurs prior to printing at least a portion of the print job.

24.   (Original) The method of claim 22, for coordinating the printing and finishing of a print job, wherein the step of outputting job coordination information further comprises outputting a job segment identifier that is uniquely associated with each job segment determined by the production monitor controller

25.   (Original)   The method of claim 21 for coordinating the printing and finishing of a print job, further comprising the steps of receiving, by a virtual finishing job ticket database, at least some job coordination information output from the production monitor controller and outputting this job coordination information from the virtual finishing job ticket database to the finishing module coordinator.

26.   (Original)   The method of claim 25 for coordinating the printing and finishing of a print job, wherein the step of receiving job coordination information by the virtual finishing job ticket database further comprises receiving a job segment identifier uniquely associated with job coordination information pertaining to a job segment and storing a copy of this job segment identifier in the virtual finishing job ticket database.

27.   (Original)   The method of claim 26 for coordinating the printing and finishing of a print job, further comprising the step of physically associating a job segment identifier code with a job segment wherein such job segment identifier code forms a vector to job coordination information, stored in the virtual finishing job segment to which the job segment identifier code is physically associated.

28.   (Original)   The method of claim 27 for coordinating the printing and finishing of a print job, wherein the step of physically associating a job segment identifier code further comprises recognizing text on a sheet located on the top of the job segment.

29.   (Original)   The method of claim 27 for coordinating the printing and finishing of a print job, wherein the step of physically associating a job segment identifier coder further comprises placing the job segment identifier code on a job segment identifier sheet.

30.   (Original)   The method of claim 29 for coordinating the printing and finishing of a print job, further comprising copying job coordination information pertaining to the job segment onto the job segment identifier sheet.

31.   (Original) The method of claim 29 for coordinating the printing and finishing of a print job, further comprising the step of reading information from the job segment identifier sheet with a virtual finishing job ticket reader.

32.   (Original) The method of claim 25 for coordinating the printing and finishing of a print job, wherein the step of outputting from the production monitor controller further comprises outputting a virtual finishing job ticket and storing a copy of such virtual finishing job ticket in the virtual finishing job ticket database.

33.   (Original) The method of claim 21 for coordinating the printing and finishing of a print job, wherein the step of outputting from the production monitor controller further comprises:

    a) identifying different job segments for differing operations of the job;

    b) outputting instructions for printing of each printing job segment; and

    c) outputting instructions for finishing of each finishing job segment.

34.   (Original) The method of claim 21 for coordinating the printing and finishing of a print job, wherein the step of outputting from the production monitor controller further comprises:

    a) outputting integrity descriptors for sue by the finishing module coordinator;

    b) outputting at least one virtual print job ticket; and

    c) outputting at least one virtual finishing job ticket.